

INTERIM FLOOD PROTECTION AND CONTINGENCY PLANS

1. General. High water conditions may occur while construction is in progress. Plans and specifications for the proposed work must address measures to maintain the integrity of the levee during these periods. Common measures include dewatering, construction of ring levees, and emergency backfilling of open excavations. Sandbags and pumping can also be used to supplement the effort. Driven sheet piling should not be used for temporary flood control purposes. Preferably, work within the critical area of the flood protection project should be scheduled during dry periods of the year. Excavation in the critical area is to be avoided between April 1 and August 1 of any year. However, waivers to this restriction may be obtained from the Corps of Engineers for periods not to exceed 30 days, provided antecedent conditions and potential river stages are favorable. A waiver request will require a contingency plan addressing high water conditions.

2. Temporary Flood Control Methods.

2.1. Dewatering. The dewatering option is more typically used on larger projects, on excavations within a levee embankment, or where construction access is limited landside of the flood control project. When excavation proceeds during high water, the dewatering system should be capable of maintaining the piezometric levels to minimum depth of 2 feet below the bottom of the excavation during a 100-year river stage event. At least one piezometer must be installed near the excavation to monitor the piezometric level. If this level cannot be maintained, provision must be made in the plans to backfill the open excavation to the original ground surface. Additional guidance on dewatering is discussed in the topic DEWATERING.

2.2 Ring Levee. A ring levee should be used when excavation within the levee embankment will lower the level of protection below the design level of protection. This option is commonly used if satisfactory impervious material and construction access is available to build an embankment.

2.2.1. The ring levee should be constructed riverward or landward of the flood protection structure to a height equal to the 100-year river stage event, in urban areas where the design level of protection is 500 year. If the design level of protection of the levee is below 100 year, the ring levee should be constructed to the height of the existing levee.

2.2.2. The crest width of the ring levee should be 8 to 10 feet and side slopes should be constructed at 1V on 2.5H. A 5 feet wide impervious zone should be constructed on the riverside slope. The levee crown should be surfaced with 5 inches of compacted crushed rock surfacing to facilitate continuous access on the levee crown in emergency situation.

2.2.3. Stability analysis should be performed for the ring levee embankments. Procedures to analyze

slope stability of a temporary ring levee should conform to the topic SLOPE STABILITY.

2.2.4. The toe of the ring levee should be offset from the open excavation a distance equal to the depth of the excavation. The alignment transition between the ring levee and original levee should not exceed a rate more severe than 1 foot offset to 3 feet of length.

2.2.5. Materials and compaction requirements for construction of the ring levee are the same as those discussed in the topic EXCAVATION AND BACKFILLING.

2.3. Backfilling. Provision to backfill the excavation during high water periods may be an adequate measure for excavations on the landside or riverside of the flood control project, especially if the work is planned during low river flow periods. Plans and specifications should include a contingency plan that addresses emergency backfill capabilities such as availability of adequate impervious fill material, type and availability of backfill equipment, and when emergency backfilling operations would be initiated during a flood period. The stockpile of the emergency fill should be shown on the construction drawings. No stockpile material is allowed on the levee slopes or crown. Typically, it is recommended that excavation work should cease and backfilling start when the river level reaches a point 3 feet below the bottom of the excavation. The contingency plan should state that the rate of emergency backfill exceeds the rate of the rising river level.

3. Contingency Plan. A contingency plan should include all necessary data related to actions to be taken in case of river exceeding the flood stage. The contingency plan should include all proposed measures to protect the area with a reduced level of protection due to construction activities.

3.1. The river stage should be monitored and the river elevation at which the contingency plan will be activated should be determined.

3.2. The contingency plan should include all material and equipment to be used to activate the plan, and the location of the stockpiled materials.